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TO : [REDACTED] ONE 25X1A

DATE: 4 March 1952

FROM : [REDACTED] *C.C.*

SUBJECT: Comment on NIE-49, Revised Draft, 25 February 1952

1. It seems to me that the present draft of the NIE-49 fails to stress the very close connection between science and industry. Page 4, for example, states that "Sweden is an important producer of ships, ball and roller bearings, industrial machinery, engines and turbines, electrical apparatus, steel and numerous other manufactures, as well as high quality iron ore." While the statement is correct, it gives the impression that Sweden is as interested and as active in heavy industry as she is in light. The implication I drew from examination of the Swedish economy and its science was that Sweden had deliberately concentrated her scientific interests on those natural resources that she had, principally high grade iron ore. Her aim was not to produce great quantities of heavy end-products but to turn out small products demanding high skill and precision that would find a ready market in the free world. For a time, I understand, she had a contract with the USSR to supply a quota of heavy industrial machinery. She had no desire to enter this field of production and quit it as soon as she could.

2. The statement on scientific potential on page 5 is a flat and correct statement; it does not show the very close relationship between research and the prosperity of Sweden. Nor does it explain that the war cut off Sweden from some of the very significant developments in electronics such as radar. Isolation, i.e., neutrality during the war, is now having a serious effect on the country's attempt to set up adequate defenses.

3. Page 7 states that Sweden "is building modern jet aircraft (and buying others from the UK)." Again the statement is correct. It seemed to me, however, that aerodynamics was one of the fields of military science in which Sweden had been isolated and that she was only beginning to come abreast of other western nations. Her present jet plane, for example, uses an English engine and is already obsolescent--and an obsolete plane, I understand, is not a formidable interceptor or fighter. The slowness with which the aircraft program is developing is also a comment on the type of Swedish industrialization.

4. On page 8, the authors state that "Sweden's air defenses have been greatly improved by electronic early warning equipment from the US and UK. . ." The fact that the equipment is foreign is a comment on the state of research in radar.

Attachment: Revision of Paragraph 3

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SECURITY INFORMATION

Suggested Revision of Paragraph 3, NIE-49,
Revised Draft, 25 February 1952

3. As one of the most highly industrialized nations in the world, Sweden is an important producer of ball and roller bearings, engines and turbines, electrical apparatus, (particularly telecommunications equipment), high quality steels, e.g. surgical steel, and an efficient and widely esteemed antiaircraft gun-- the Bofors. It has recently attempted to secure for itself part of the prewar German market in precision instruments. All these products have one thing in common: they stem directly from Sweden's greatest natural resource--a very high grade iron ore and they all demand great skill in manufacture. The bulk of Swedish manufactures is not impressive; the engineering skill that they reflect is unusual. The slow growth of the Swedish defense effort illustrates the difficulty the country faces in mass production. She has under production a jet fighter (equipped with an English engine) acceptable but not unusual in design; but actual manufacture of airframes is slow. The country can and does produce for export small numbers of Bofors guns; it prefers to license the design for manufacture. To maintain its advantage in a highly competitive market, Sweden has developed a small but excellently trained body of engineers and scientists chiefly in metallurgy and electronics whose research is heavily subsidized by both the government and private industry. At present, Sweden is, however, suffering from her exclusion from wartime developments; in radar, for example, and in phases of electronics such as the VT fuze or vacuum tubes the country is well behind the US or the UK in its developments. In atomic energy its research is negligible: Sweden has built a finely engineered cyclotron; it proposes to have a small underground pile in operation in 1953. The country is dependent, however, on laborious extraction of uranium from her oil shales. Sweden has done considerable research in aviation medicine; her doctors rank among the best in Europe, and research has produced a synthetic substitute for plasma. Finally, the high standard of education that Sweden has demanded of her scientists and engineers in the past is now something of a detriment to her defense effort. She has not enough chemists, for example, to keep up with her expanding defense needs.

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